

REMARKS

Claims 1-9, 11-18 and 25-25 are pending and were addressed in the subject office action. Among the pending claims, there are four independent claims, claims 1, 12, 18 and 25.

The claims stand rejected on various grounds under 35 U.S.C. 112, 102 and 103.

In a telephone conference between the undersigned and Examiner Chambers on November 22, 2004, agreement was reached on certain issues, as reflected in the Interview Summary by Applicant filed on that day. This paper is predicated upon, and supplemental to, that agreement.

Entry of Amendments after Final

Entry of the proposed amendments under 37 CFR 1.116 is requested because the amendments address objections raised by the Examiner, place the claims in better condition and raise no new issues of patentability.

Objection to Prior Amendment and Rejection of Claims 1-9 and 11 Under 35 U.S.C. 112

An objection was raised regarding the amendment filed September 30, 2004 on the basis that the proposed amendment to claim 1, which adds the language "substantially free of tungsten", attempted to add new matter. In response, claim 1 has been amended to delete the term "substantially".

Rejection of Claims 1-9, 11, 18 and 25-39 Under 35 U.S.C. 112

The above-identified claims stand rejected under 35 U.S.C. 112 on the basis of an alleged lack of antecedent basis for "pad section" and "bridge section" in the independent claims. In the interest of advancing prosecution, the claims have been amended to provide clear antecedent bases for these terms. However, it is respectfully maintained that the claims were sufficiently clear prior to this amendment.

Rejection of Claims 1-8, 11, 12-17, 18 and 25-32 and 35 Under 35 U.S.C. 102

The above-identified claims stand rejected under 35 U.S.C. 102 as being anticipated by PCT Publication WO 9742462 to Martinez-Tovar ("Martinez-Tovar (PCT)"). Among these rejected claims there are four independent claims: claims 1, 12, 18 and 25.

As discussed in the November 22, 2004 telephone interview, the stated rejection was based on an interpretation of claims 1 and 25 no longer maintained by the Examiner. With

respect to claim 1, it is now agreed that the phrase "the bridge section being free of tungsten disposed on a semiconductor material" refers to all layers of metal on the semiconductor material of the bridge section, thus excluding tungsten as taught by Martinez-Tovar (PCT). With respect to claim 25, it is agreed that the phrase "the metal disposed on the bridge section of the semiconductor material consisting of titanium" refers to all the metal on the bridge section of the semiconductor material, thus excluding tungsten as taught by Martinez-Tovar (PCT), despite the presence in the Martinez-Tovar (PCT) device of a layer consisting of titanium.

During the telephone interview, the Examiner maintained the rejection of claim 18 on the basis that "consisting essentially of" is rarely applicable in claims to non-chemical inventions, and/or method claims. It was also asserted that claim 18 lacks a recitation of the effect or process having the characteristic to which the phrase "consisting essentially of" is directed, thus rendering the phrase ineffective.

The Applicants maintain that the frequency with which the phrase "consisting essentially of" is used in apparatus claims is irrelevant to the interpretation of claim 18, in which the phrase is intended to exclude a layer of tungsten on the semiconductor material on the bridge section as taught by Martinez-Tovar (PCT). The scope of other excluded materials (and other permitted materials to which the claim remains open) is clear from the specification and prior arguments regarding the materials that do or do not materially affect the basic and novel characteristics of the claimed invention. There is no requirement, as asserted by the Examiner, that a claim limited by "consisting essentially of" also recite a process bearing on the basic and novel characteristic that defines the effect of the phrase. Instead, the basic and novel characteristic that guides the meaning of 'consisting essentially of' can be determined from the specification and/or prosecution history. See *Ex parte Hoffman*, 12 USPQ 2d 1061, 1063-1064 (Board of Patent Appeals and Interferences 1989) (interpreting a claim limited by 'consisting essentially of') ("To determine the steps included versus excluded the claim must be read in light of the specification..."); *PPG Industries, Inc. v. Guardian Industries Corp.*, 156 F.3d 1351 at \_\_\_, 48 USPQ2d 1351 at 1355 (Fed. Cir. 1998) ("Under well-settled principles, PPG was entitled to provide its own definition for the terms used in its patent claim, including the transition phrase 'consisting essentially of.' In *Water Technologies Corp. v. Calco, Ltd.*, 850 F.2d 660, 666, 7 USPQ2d 1097, 1102 (Fed. Cir. 1988), for example, this court looked to the prosecution history of a patent to determine whether an unlisted ingredient was excluded from the scope of a "consisting essentially of" claim.").

-10-

In this case, the specification clearly discloses a semiconductor bridge device having a layer of titanium without tungsten, and explains the advantages thereof, thus providing a clear indication of the effect of the "consisting essentially of" language. Since it is clear from the specification and from arguments made during prosecution that "consisting essentially of" excludes tungsten from the layers of metal on the bridge section, and since Martinez-Tovar (PCT) only shows igniter devices having tungsten on the bridge section, this stated ground of rejection is respectfully traversed.

The rejection of claim 12 is based on the assertion that the titanium layer shown in Martinez-Tovar (PCT) is preconditioned to be stabilized against temperature-induced variations in resistance by being covered during the manufacturing process by other layers (i.e., tungsten) and therefore not exposed to oxygen.

The Applicants respectfully point out that there is no indication in Martinez-Tovar (PCT) that the tungsten layer is effective to precondition the titanium in the way, or with the result on the titanium, disclosed and claimed by the Applicants. In fact, nothing in the reference states that the tungsten has the stabilizing effect on titanium attributed to it by the Examiner. Even if the tungsten shown in Martinez-Tovar (PCT) does protect the titanium from oxygen, this alone would not be adequate to anticipate claim 12 because there is nothing to indicate that covering titanium with tungsten preconditions the titanium, i.e., that tungsten causes the same changes in the titanium as does the preconditioning process described in the present invention. In other words, the titanium defined in claim 12 is not necessarily inherent in the device of Martinez-Tovar (PCT), because protecting titanium from oxygen is not the same as treating the titanium so that oxygen does not affect it. It is respectfully submitted that to show a *prima facie* basis for this rejection, the Examiner should provide evidence that one skilled in the art would recognize that covering titanium with tungsten would necessarily produce the same change in the titanium as the recited preconditioning. See MPEP 2112. In Ex parte Levy, 17 USPQ2d 1461 (Bd. Pat. App. & Inter. 1990), the Board of Patent Appeals and Interferences held that the Examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art. Therefore, even if it were a possibility that the tungsten might change the titanium in the same way as the preconditioning process disclosed by the Applicants, this would still not support the stated rejection because the mere fact that a certain thing may result from a given set of circumstances is not sufficient to establish inherency. Finnigan Corp. v. ITC, 51 USPQ2d 1001 (Fed. Cir. 1999).) Since the

-11-

cited reference does not necessarily embody claim 12, there is no adequate basis on which to assert that the titanium disclosed in Martinez-Tovar (PCT) inherently anticipates claim 12. For this reason, the stated ground of rejection is respectfully traversed.

Rejection of Claims 9, 33 and 34 Under 35 U.S.C. 103

Claims 9, 33 and 34 stand rejected under 35 U.S.C. 103 as being obvious over Martinez-Tovar (PCT) in view of U.S. Patent 4,976,200 to Benson et al ("Benson"). Benson is cited for disclosing the use of undoped silicon substrate in a tungsten bridge device.

Claims 9, 33 and 34 are allowable at least because they depend from base claims 1 and 25, which are allowable for reasons set forth above. Accordingly, the stated ground of rejection is respectfully traversed.

Double Patenting Rejection

Claims 1-8, 11-18, 20, 25-32 and 35 stand rejected under the judicially-created doctrine of obviousness-type double patenting in view of claims 1, 3, 4, 5-9, 12-20 and 36 of U.S. Patent 6,133,416 to Martinez-Tovar et al ("Martinez-Tovar (US)'), the U.S. equivalent of Martinez-Tovar (PCT).

Among the claims of Martinez-Tovar (US) cited as the basis of the double patenting rejection, there are three independent claims, claims 1, 14 and 36. Each of these claims, and the other cited claims dependent therefrom, defines a semiconductor bridge device having, on the bridge section, a base layer comprised of titanium and a top layer comprised of tungsten.

For reasons set forth above, claims 1, 18 and 25, and the claims dependent therefrom, are patentably distinct from a device comprising a layer of tungsten over a layer of titanium. Furthermore, as discussed above, nothing in Martinez-Tovar (US) indicates that the titanium in the claimed devices is preconditioned, as required by claim 12. For this reason, the stated grounds of rejection are respectfully traversed.

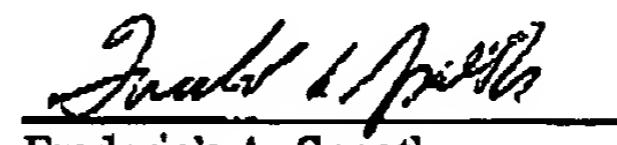
New Claims 36-38

The entry of new claims 36-38 is requested because these claims are dependent claims that merely repeat the limitations of claims 5, 6 and 8, respectively, which are already pending in the application and which therefore raise no new issues of patentability.

-12-

Each of the stated grounds of rejection have been addressed or traversed. Reconsideration and favorable action is respectfully solicited.

Respectfully submitted,

  
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